CHAPTER 8

FOREST RESOURCE MANAGEMENT

BMP 8-1 ACCEPTED FOREST PRACTICES
BMP 8-2 WILDLAND/URBAN INTERFACE MANAGEMENT
BMP 8-3 FUELS MANAGEMENT

BMP 8-1
ACCEPTED FOREST PRACTICES

DEFINITION

The incorporation of the Amended Forest Practice Rules consist of Protect, and Preservation of Timber Land, Trees and Flowers of NRS 527.010-527.300 and Forest Practices Act of 1955, NRS 528.010-528.090. Timber resources in Nevada are the responsibility of the Nevada Division of Forestry (NDF) and other federal land management agencies, the US Forest Service and the USDI Bureau of Land Management.

PURPOSE

To protect, preserve and enhance forest resources through forest health management; providing for water quality, reduce soil erosion and the control of runoff and sediment delivery from forestlands.

APPLICABILITY

On sites affected by silvicultural activities such as timber harvesting, stand improvement, firebreaks and related access construction; also riparian zones directly or indirectly affected by such activity.

PLANNING CRITERIA

1. **Timber Harvesting Plan** - Through use of a timber harvesting plan, it is essential to provide for water quality as well as future continuous timber growth and protection of other resources on timberlands.

2. **Silvicultural Method**s - Every timber operator should exercise due diligence in the management and operation of felling, yarding, and loading of timber or other related activity to prevent unnecessary damage to residual trees, riparian vegetation and water quality.

3. **Erosion Control** - Timber operators should conduct operations in a manner to protect soil resources from unnecessary damage and erosion. Tractor roads, skid trails, landings, logging roads, and firebreaks should be located, constructed and left after logging so that water flow thereon and water flow in natural water courses do not contribute to excessive erosion of soil and degradation of water quality. Waterbreaks should be installed on tractor roads, skid trails, landings, logging roads and firebreaks.

Following silvicultural activity, natural water courses should be opened where permanent culverts and bridges have not been constructed and seeding or other practical measures should be taken to meet the objective of preventing excessive soil erosion and the degradation of water quality.

4. **Riparian Zone Protection** - Careful consideration should be given to ensure the protection of water quality and the biological capacity of streams and lakes. Further consideration should be given to minimizing erosion of stream beds and lake banks during timber operations. Streams should be kept free of slash, debris, side cast and other materials and accidental deposits should be expeditiously removed. Trees harvested within the zone of influence of the stream or lake should be removed in such a manner as to minimize erosion and maintain water quality. Discharge of soil, bark, slash or the organic and inorganic material from any logging, construction, or associated activity into any lake or stream in quantities deleterious to fish, wildlife, or other beneficial uses of water should be prevented.

5. **Hazards Reduction** - Special provisions should be made to reduce fire hazard. Accelerated erosion may occur after a fire.

Pesticide use in Nevada is regulated by the Nevada Division of Agriculture (DOA). DOA has developed a State Management Plan for the use of pesticides and should be contacted in conjunction with NDF regarding the types and amounts of pesticides proposed for use.

METHODS AND MATERIALS

See Practices in Appendix H-1.

MAINTENANCE

Structural measures such as bridges, culverts and water bars are to be maintained in a condition that will adequately perform their designated function. Vegetation should be replanted in revegetated areas that fail to establish. Protection of revegetated areas from livestock, vehicle or foot traffic and fire should be continued.

EFFECTIVENESS

The use of the Amended Forest Practice Rules as a base for more site specific planning can be a highly effective method for reducing sediment loads in runoff water from these sites.

BMP 8-2
WILDLAND/URBAN INTERFACE MANAGEMENT

DEFINITION

The management of the area where urban development meets wildlands, which is defined as the wildland/urban interface.

PURPOSE

Vast areas throughout Nevada and the United States now contain high value urban development intermingled with flammable native and adapted vegetation, the "wildland/urban interface". Structural fire losses are increasing, and the threat of major loss of life has become a reality. Recent devastating wildfires have occurred within the wildland/urban interface areas of Nevada which identifies the need to manage the wildland/urban interface in an attempt to minimize the threat of wildfire.

APPLICABILITY

To all areas where urban development has encroached upon wildlands or urban areas which have heavy, extensive landscaping susceptible to wildfire.

PLANNING CRITERIA

Basic planning criteria should include developing the necessary baseline data required to implement a comprehensive wildland/urban interface management program. Primary base line data is governed by the specifics of the management area but, at a minimum should include topography, vegetation, climate/weather, land use, access/escape routes, infrastructure, suppression capabilities and emergency services.

METHODS AND MATERIALS

The following items should be considered when developing a management plan for a wildland/urban interface area.

1. **Prevention Programs -** A prevented fire requires no suppression and results in no damage.

   Education: Development of a fire prevention program to motivate the public to be fire safe by teaching simple precautions.

   Regulations: Developing rules and regulations which control specific land uses and the publics actions within the wildland/urban interface.

Law Enforcement: The enforcement of fire laws and regulations is essential to effectively prevent wildfires.

2. **Presuppression Programs -** The reduction of highly flammable fuels through fuels management.

Fuelbreaks: Fuel density is reduced or a vegetation type is converted to a less hazardous, more fire retardant type in a strategically located, easily accessible strip of land. Fuelbreaks serve as a line of defense, break up large uniform areas of fuel, save lives and reduce suppression costs. Primary methods include: herbicide application, mechanical application, livestock grazing, and prescribed burning (See BMP 8-3 , "Fuels Management").

Planning, Zoning and Development Regulations: Urban development proposed for wildland areas must address planning for fire protection, fire access requirements, fire safe building practices, water supplies and property clearing and maintenance for ongoing fuels management. Fire hazard risk assessments should be conducted by all state and local governments to identify upfront those areas prone to wildfire. Urban development should be restricted or extensively controlled in these areas.

Greenbelts: The use of greenbelts has been successful in providing safety from wildfire. A greenbelt is designed to provide a buffer zone between the highly flammable wildland vegetation and the urban environment. Typical greenbelts include: golf courses, parks, cemeteries, reservoirs and agriculture.

3. **Suppression Activities -** Wildfire suppression or wildland fire control is at best one of the most hazardous activities ever undertaken by man. The following elements comprise effective and systematic wildfire suppression activities.

Advanced Fire Planning: The development of initial attack plans for specific areas including the deployment of men and equipment, tactics, and evacuation.

Fire Communication Systems: Reliable communications and the application of the nationally recognized Incident Command System (ICS) is critical.

Fire Transportation Systems: Transportation systems provide the means and facilities for moving men and equipment to and from the fire area. Effective transportation systems save valuable time and improve initial attack on the wildfire.

Manpower & Equipment: Well trained and well equipped wildfire crews are essential to successful wildfire suppression. Equipment requirements include hand tools, mechanized equipment and aircraft resources.

Cooperative Agreements: Cooperative agreements and/or mutual aid agreements reduce the need for duplication of efforts, improve coordination, and minimize funding constraints. Effective wildfire suppression relies heavily on mutual aid agreements, given the shear magnitude of wildland fire.

4. **Rehabilitation Activities -** Activities to promote the recovery and reestablishment of adapted and native plants destroyed by wildfire, to reduce accelerated soil erosion and to do so as quickly as possible. Primary rehabilitation activities include: seedling planting, drill seeding, broadcast seeding, sediment and erosion control structures and soil stabilization treatments (See BMP's 2-1 through 3-8).

MAINTENANCE

A wildland/urban interface management plan requires ongoing maintenance activities in several areas. The management plan should be updated annually or whenever there is a significant change in land use or a component of the plan. A fuels management plan should be developed (BMP 8-3, "Fuels Management"), and on going maintenance provided to continue the effectiveness of the treatment.

EFFECTIVENESS

The development and maintenance of a wildland/urban interface management plan will be highly effective if it is regularly reviewed and updated.

BMP 8-3
FUELS MANAGEMENT

DEFINITION

Management and manipulation of vegetation by mechanical, chemical, or biological means, or by controlled burning on forestland, rangeland, native pasture, pastureland, and public or private land (Includes reducing excess brush stands through selective and patterned control methods to protect the soil and maintain or improve the quality of runoff water).

PURPOSE

To maintain or reduce a level of vegetation to minimize the threat of wildland fire.

APPLICABILITY

The term "fuels" as used in the practice, includes woody half-shrubs, shrubs, and trees (alive, dead or dying) which invade lands on which they are not part of the natural (climax) plant community or which occur in amounts significantly in excess of that which is natural to the site.

PLANNING CRITERIA

A fuels management plan requires the careful integration of vegetation treatments to all components of the vegetative community. Effective fuels management requires the reduction and/or removing and disposing of ground, overstory and ladder overstory fuels. Components of a fuels management plan are driven by the vegetation of the site and may include the following.

1. Timber harvesting, thinning, and pruning.

2. Brush removal, pruning, and trimming.

3. Debris removal utilizing lopping and scattering, burying, piling and burning, and chipping.

Fuels management also requires consideration of site specific factors such as slope, aspect, species diversity, horizontal and vertical continuity, and proximity to improvements. While these factors are highly variable, and the number of combinations are unlimited, criteria and guidelines for implementation of fuels management programs have been developed by forestry and wildland fire professionals such as the Nevada Division of Forestry.

METHODS AND MATERIALS

Please refer to Appendix H-3.

1. Mechanical
   a. Plowing
   b. Chaining
   c. Harvesting, thinning, trimming
   d. Mowing, chipping, logging, and beating

2. Burning

3. Chemical (Herbicides)
   (See Appendix H-3 for specifications and guidelines)

MAINTENANCE

1. Follow best management practices including proper grazing use.

2. Follow up treatments will be required on most fuels management areas. Length of time between treatments will depend on the effectiveness of the vegetation kill in the initial treatment and species of trees and shrubs involved.

EFFECTIVENESS

Fuels management is effective in improving watershed conditions for better water infiltration, reduced runoff and lower sediment delivery and for wildland fire protection.